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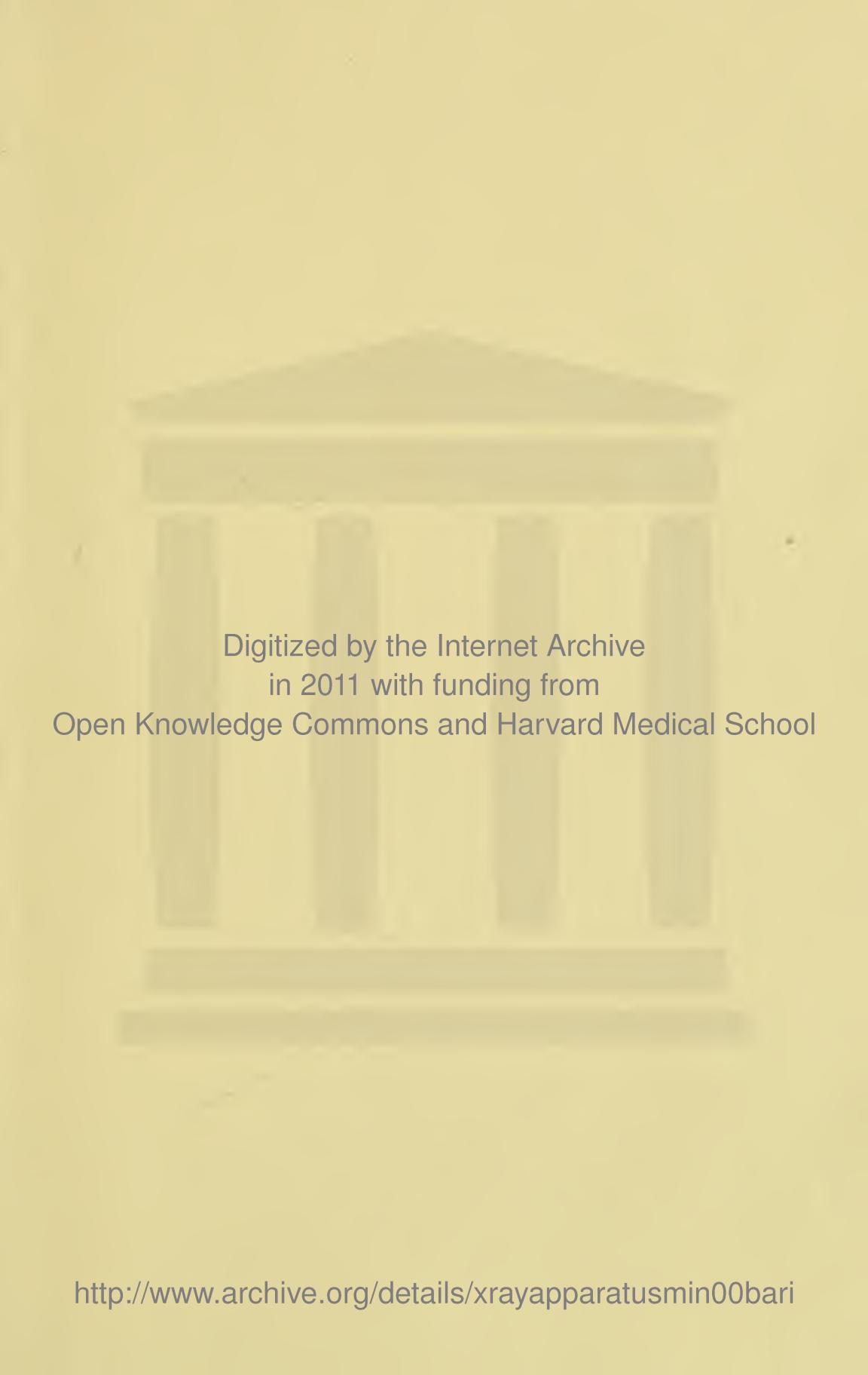


RÖNTGEN

THE LLOYD E. HAWES
COLLECTION IN THE
HISTORY OF RADIOLOGY

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VERITATEM PER MEDICINAM QUÆRAMUS

A faint, light-colored watermark of a classical building with four columns and a triangular pediment is visible in the background.

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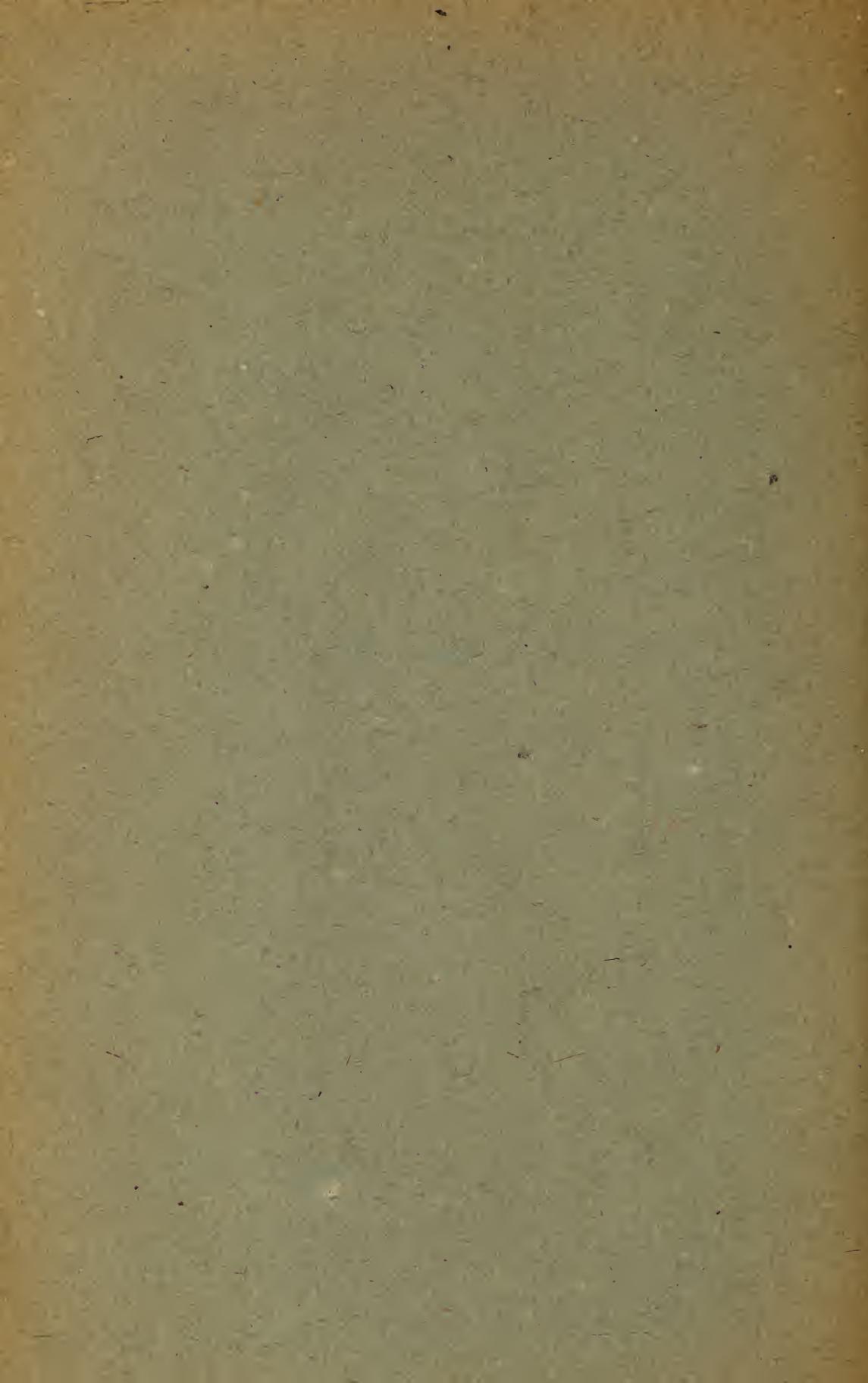
<http://www.archive.org/details/xrayapparatusmin00bari>

THE BARIO VACUUM CO.,

156 EAST 23RD STREET.

NEW YORK CITY.

U. S. A.



The Bodine Press,
187 Pearl Street,
New York.

X-RAY APPARATUS,
MINIATURE LAMPS
AND ACCESSORIES.



THE BARIO VACUUM CO.,
156 EAST 23d STREET,
NEW YORK CITY.

No. 1.

1902

October, 1902.

The General Electric Company having now practically discontinued its manufacture and repairs of Crookes Tubes and X-Ray Material, we take much pleasure in informing Doctors and Physicians that we have increased our factory facilities and appliances so that we are prepared to supply all demands for X-Ray Material. Our Crookes Tubes are being made under expert supervision and by experienced Glassblowers, and our Customers may rest assured that their orders, whether for new Tubes or repairs, will be treated with prompt attention.

THE BARIO VACUUM REGULATOR.

Since Professor Roentgen's Marvellous Discovery of the X-Rays, the various apparatus necessary for their production have been steadily improved year by year. The X-Ray operator of to-day with ordinary apparatus can obtain results far in advance of anything seen in the past, but when he attempts heavy work or desires to get the most perfect detail and finish, one serious difficulty at once confronts him, namely, the inability to keep the vacuum of his Crookes Tube constant and steady.

The Bario Vacuum Regulator has been especially designed for this purpose, and by its means, the operator, whatever his type of exciting apparatus may be, can adjust the vacuum of the Crookes Tube to any desired degree, either high, medium, or low and keep it steadily at that point for any length of time, the simply pushing in or pulling out of the sliding rod shown in the cut, being all that is necessary to change the vacuum of the tube.

It will of course be noticed on reference to our diagram that this Regulator is connected with a Crookes Tube, having an auxiliary terminal containing a chemical salt preparation, and it cannot be used except with such tubes. Non adjustable tubes, while to some extent satisfactory for light work, are very seldom found of sufficient penetration to enable the operator to obtain radiographs or examinations of the heavier parts of the body, while the Regulator enables him to so manipulate his tube as to obtain any result.

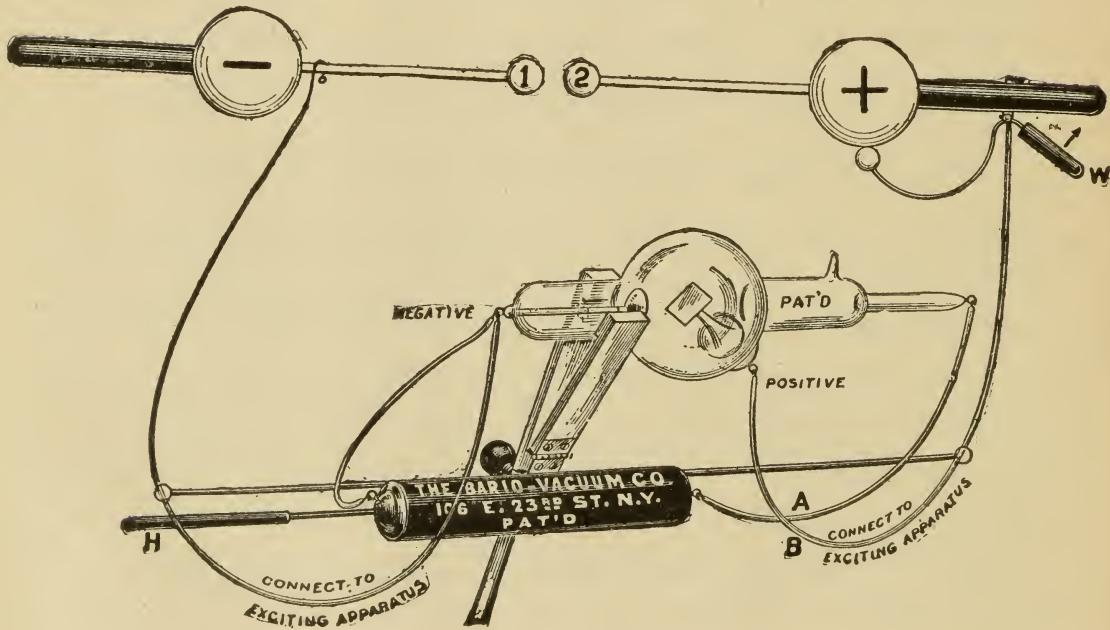
It will at once occur to the experienced X-Ray worker that the combination shown in the Cut must necessarily eliminate a great deal of the danger of puncturing as it is practically impossible for the current to spark across the outside of the tube, provided of course, that the usual precautions are observed as to having no dust on the tube or allowing dangling wires to touch it.

The Bario Vacuum Regulator, as stated above, can be used on any type of exciting apparatus with good results, but some little differences may with advantage be pointed out in their order.

FIRST:—When used on a Static Machine:—

The Regulator should be connected as shown in

Cut No. 1.



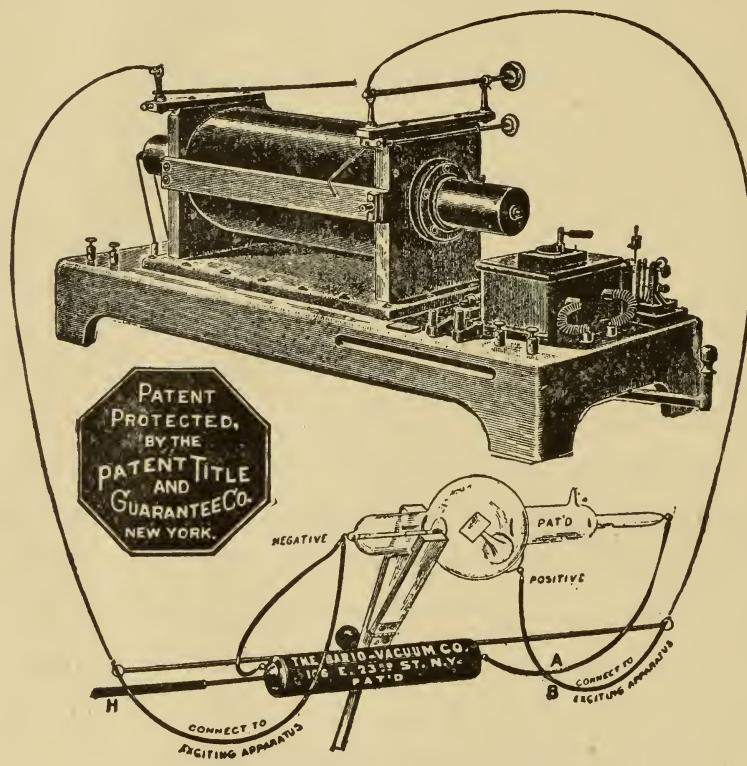
taking care to have the negative terminal of the Regulator attached to the negative or cathode end of the tube and the positive end of the Regulator attached to the Chemical adjuster on the tube. The positive or negative of a Static Machine is easily ascertained by allowing the Current to flow between the terminals 1 and 2, when at one terminal a thick white spark or sparks will be noted whereas at the other a purple brush will be seen. The purple brush is then marked as the Positive and the white spark as the Negative. The sliding rod end of the Regulator marked H in the Cut is always the negative. The reader should note that a Static Machine of any type reverses polarity occasionally when not in use and therefore the positive and negative should **always** be ascertained before starting up the Regulator.

In most cases the Static Machine is fitted with Spark Gap W which, while not absolutely necessary for X-Ray work, is undoubtedly a great aid to the best results. If this is needed, the operator should forward the diameter of the insulated ends of his terminals so that same can be supplied to fit.

SECOND:—When used on an Induction Coil.

The Regulator should be connected as shown in Cut No. 2. the negative and positive ends of the Regulator being connected in exactly the same method as for a Static, but of course, as the polarity of a coil does not change, once it has been wired up correctly, it can be left on the Tube Stand permanently and need not be turned around as with a Static. If a Wehnelt or other Electrolytic

Interrupter is being used, care should be taken not to push the sliding rod H in too far as, by so doing the vacuum may be lowered too much and require some little time before it will recover itself. With any kind of Mechanical Interrupter, this is not likely to occur and if a little care is taken neither will it with the Electrolytic Interrupter.



Cut 2.

THIRD:—When used on an Alternating Current Set.

The Regulator can be connected exactly as with an induction coil, but the rod H should be started out at full length, as very little is required to lower the vacuum of a double focus Tube when operating on the Alternating Current.

Price of the Bario Vacuum Regulator complete with necessary cords, Tube Holder, Spreader and full instructions, \$25.00 Net.

Pair of Spark Gaps, (for use on Static) extra 5.00 Net

CROOKES TUBES.

We have fully recognized the fact that the X-Ray operator depends entirely upon the quality of his Crookes Tube for his work and have accordingly very carefully experimented with and tested every variety of tube at the present time on the market.

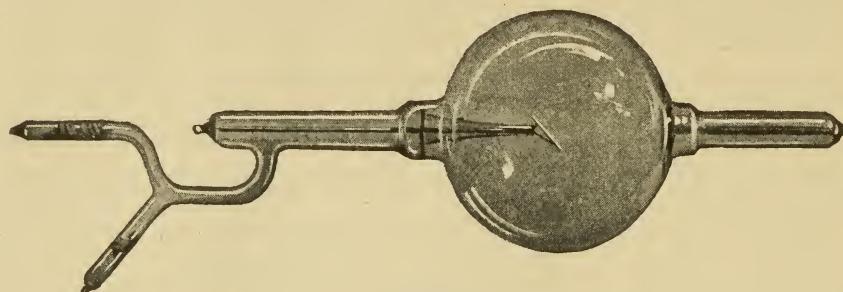
The tube known as the Bario Vacuum Type shown in Cuts 1 and 2 has been especially designed and made by us for use with our Regulator and in construction and quality, we honestly think it will be found superior to any other type of tube. It is fitted with a reinforced anode enabling it to be operated on powerful machines for a long time at a dull red heat without injury. The chemical terminal is placed directly behind the anode which expert testimony unites in declaring to be the correct position. The glass seals and general workmanship of the tube are of the best and unlike the majority of other tubes on the market, it can be repaired over and over again at a moderate cost. Price, \$15.00.

We can also supply a tube of this type, but with the Funnel anode designed by Mr. Westbury late of the General Electric Co., the same as shown in Cut No. 9.

This Tube is very strongly recommended for use in cases of Cancer, Carcinoma, Lupus, etc. and is indorsed by such operators as Dr. Mulvaney of Jersey City, Dr. Scott

of Kansas City, Dr. Pierce of Buffalo and many other leading operators. Price, \$15.00.

The type of tube shown in Cut No. 3 is also fitted with chemical terminal and can be used with the Regula-



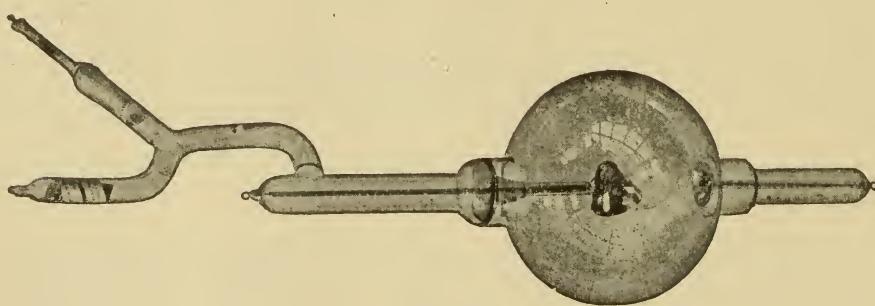
Cut 3.

tor satisfactorily. It has a re-inforced anode and can be supplied with potash, hydrogen or oxygen adjuster as preferred. Price, \$12.00.

The same tube but without reinforced anode suitable for use with medium current. Price, \$10.00.

Tube without reinforced anode and smaller 4 inch diameter bulb suitable for small currents. Price, \$8.00.

Funnel Focus Type of tube shown in Cut No. 4, for use in cases of Cancer, etc.



Cut 4.

Price, - - - \$15.00.

Double Focus Tube for use with High Frequency Sets on alternating Current. Price, \$12.00.

Double Focus Tube for use with very heavy Sets, has reinforced anodes, extended terminals and extra heavy Cathodes. Price, \$15.00.

All the above tubes are made of best American glass and workmanship in our Factory under expert supervision and can be repaired promptly at a moderate figure. State apparatus when ordering.

We can also supply tubes fitted with water cooled arrangement for use on very heavy coils with mercury or electrolytic interrupters which however, are expensive and we cannot guarantee that they can be satisfactorily repaired if damaged. Price from \$25.00. to \$45.00.

Telescope Stand, Tube Holder, Spreader & Cords.

Price complete, - - - \$12.50.

Tube Holder only, Price, - 2.50.

Spreader and cords only, Price, 1.50.

We have much pleasure in stating that we have provided special facilities for the repairs of all kinds of Crookes Tubes, and shall be pleased to receive Consignments of such tubes to look over and estimate thereon. It is of course difficult to state an arbitrary figure for repairs until we receive the tubes, but Customers can rely on our doing the best for them in all cases, and that prompt attention will be given. When ordering please note the following types.

INGLE FOCUS TUBES.

DOUBLE FOCUS TUBES.

B. V. No. 5. Ordinary Double Focus Type, - \$12.00

B. V. No. 6. extra heavy type, reinforced anodes etc. 15.00

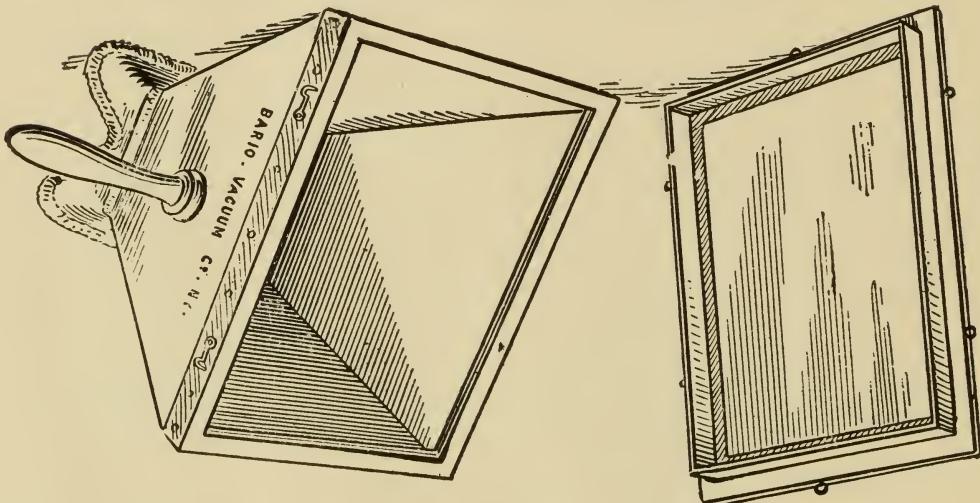
Type of Apparatus, Length of Spark and Vacuum required, should always be stated.

THE FLUOROSCOPE.

We have recently placed on the market an improved and highly efficient type of Fluoroscope, which we can strongly recommend. It is manufactured by us from the best materials and is fitted with adjustable frame so that the screen can be taken off at will.

The screen is protected by a thin sheet of Gelatine which prevents dust or dirt accumulating on the crystals and deteriorating them which has been a great fault up to the present.

The Cut shows ordinary type of Fluoroscope.



Prices.

5x5,	-	-	-	\$10.00
5x7,	-	-	-	12.50
6x7,	-	-	-	13.50
6x8,	-	-	-	16.00
7x9,	-	-	-	20.00
8x10,	-	-	-	24.00

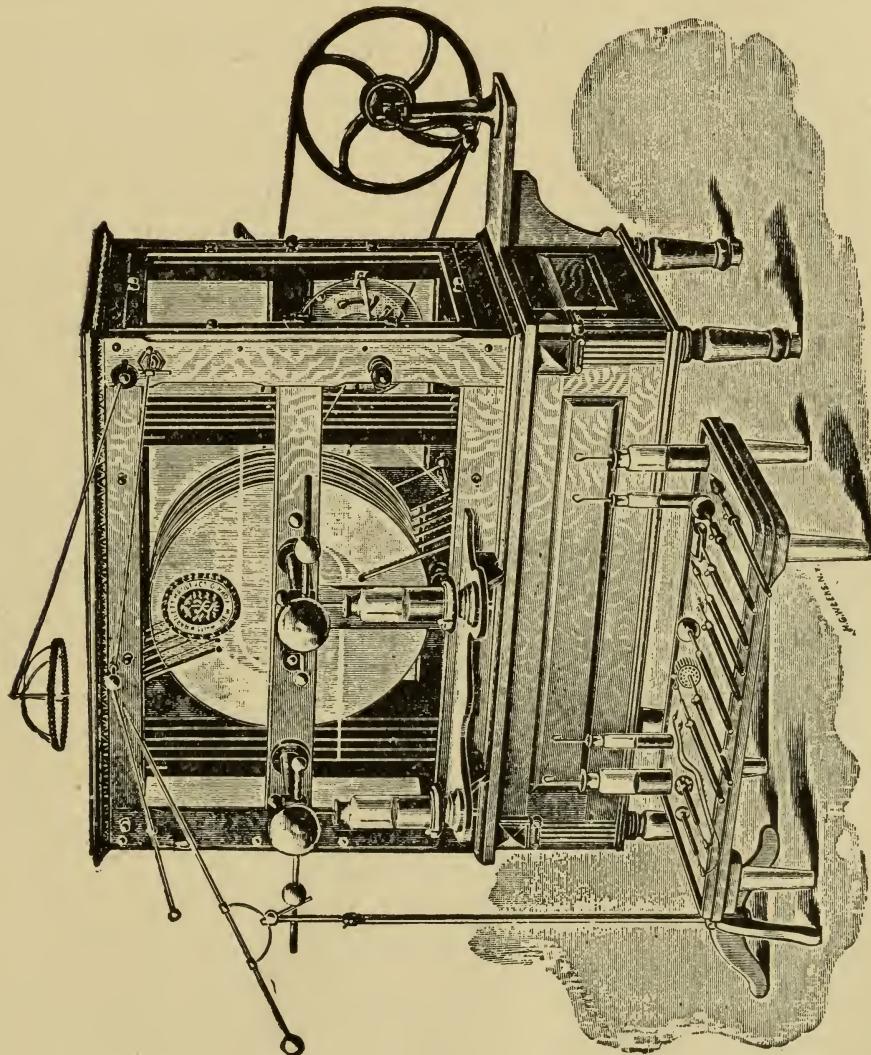
Above are for screens made of platino cyanide of barium. Screens without cases 25 cents (25c) per square inch.

Tungstate of Calcium Screens fifteen cents (15c) per square inch. Intensifying Screens, made to order.

Prices on application.

THE STATIC MACHINE.

We can strongly recommend the Static Machine as shown in Cut No. 6, to all operators desiring to obtain



an exciting apparatus which will give them both perfect X-Ray work and the best Electro-Therapeutical results. This type of Machine was given the only award for X-Ray apparatus at the Pan-American Exposition and after very careful and exhaustive tests, we have come to the conclusion that it is superior to all other types on the market. The charging arrangements are remarkably simple and the purchaser need not fear any trouble with it in moist climates or very humid weather.

Prices including full set of Electrodes, Three sets of Leyden Jars, Telescope Stand, Platform and a Pair of Interrupters.

Six	Plate,	26	inch	Circles,	\$250.00	Net.
Eight	"	30	"	"	350.00	"
Ten	"	30	"	"	400.00	"
Twelve	"	30	"	"	450.00	"
Sixteen	"	30	"	"	550.00	"

Special sizes made to order.

The above prices do not include Motor or Rheostat which will be furnished on receipt of particulars as to size of Machine required and whether for direct or Alternating Current.

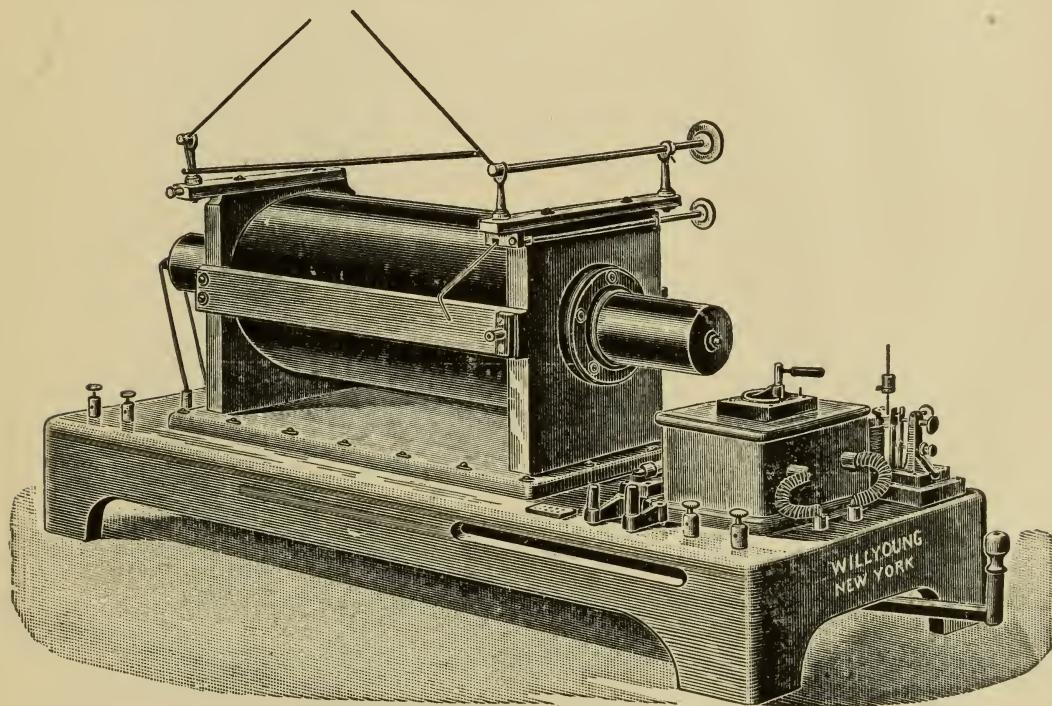
Special X-Ray Outfit for above, consisting of

- 1 Bario Vacuum Regulator, complete,
- 1 Bario Vacuum X-Ray Tube,
- 1 Bario Vacuum Funnel Focus Tube,
- 1 5x7 Barium Fluroscope,

Price, - - - \$65.00.

INDUCTION COILS.

The type of dry insulated Induction Coil shown in Cut No. 7 is one which has found great favor amongst operators desiring exciting apparatus for X-Ray work alone or who have not the necessary space at their disposal to use a Static Machine. They can be relied upon to give the best possible service and are equipped with all the latest improvements and can be used either on Batteries or 110 Volt circuit at will.



Prices as follows:-

Eight inch,	- - -	\$250.00.
Ten " "	- - -	295.00.
Twelve " "	- - -	335.00.
Fifteen " "	- - -	410.00.
Eighteen " "	- - -	535.00.

Other sizes made to order. Storage Battery Outfit extra.

Special X-Ray Outfit for above consisting of

- 1 Bario Vacuum Regulator.
- 1 Reinforced Tube.
- 1 Funnel Focus Tube.
- 1 5x7 Barium Fluroscope.
- 1 Telescope Stand.

Price, - \$70.00.

We would call your attention to the fact that we handle both direct and alternating current Motors. Also motor generators giving 60 volts and 60 Cycles and from two amperes up. Prices on application.

We are also prepared to give expert advice on all kinds of X-Ray Installations and to furnish complete X-Ray Outfits of all kinds.

We also make a specialty of Storage Batteries of all kinds.

INTERRUPTERS.

We are prepared to supply complete outfits consisting of either Wehnelt, Caldwell or Mercury Jet Interrupters for Coil work together with Liquid or Mechanical Rheostats with full instructions for setting up and manipulating, but owing to the fact that so many different points enter into the selection we would prefer intending purchasers to send us full particulars of their Coil and Current, when we shall be pleased to advise on the subject.

ACTINOMETER.

We have recently designed and placed on the market a special instrument by means of which it is possible to gauge to a nicety the penetrative powers of any Crookes

Tube. It consists of a Fluroscope case with graduated Circles varying in thickness and should be a valuable adjunct to all X-Ray operators. Price, \$15.00.

DIAGNOSTIC OUTFIT.

The above was designed by Prof. Coakley, of the Medical Department of Cornell University. The clear glass tube covers the lamp when used for transillumination of the Antrum. The glass tube being removable, is easily made aseptic. The hard rubber tube lined with white glass is used for transillumination of the Frontal Linus.

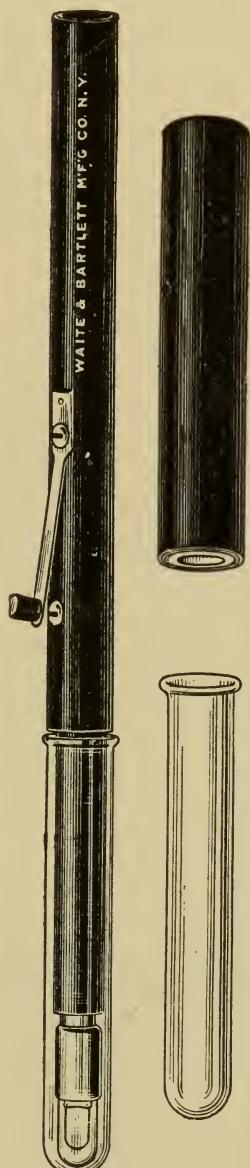
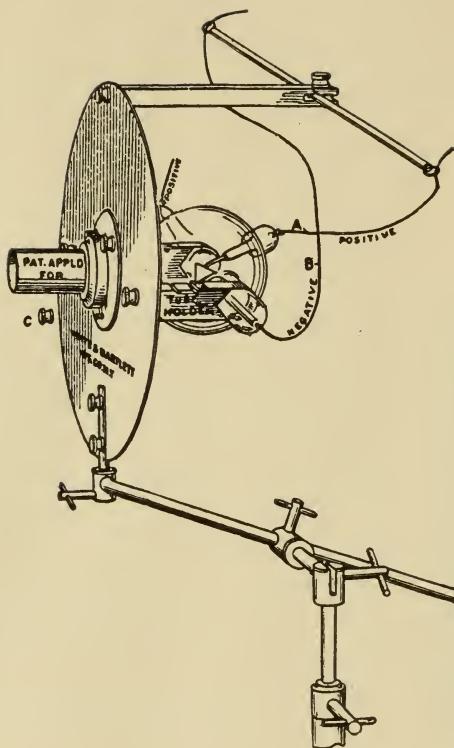


PLATE HOLDER.

Recognizing the fact that there is a growing demand for a convenient Plate holder and intensifying Screen combined, we have much pleasure in recommending our special type which is so constructed that it combines absolute safety with the minimum amount of capacity

Price 8x10 size, without screen,	\$ 3.50
" " " with screen	23.50
" 11x14 " without screen,	4.50
" " " with screen,	43.00



The above cut illustrates a new device and method of using the X-Ray for therapeutic purposes. It consists of an adjustable stand with a large disc of metal, mounted as shown. There is an opening 3 inches in diameter in the center of this disc. The arrangement for holding the tube is so placed that the rays pass directly through the center of this opening and as the tube is mounted on the Metal Disc, no matter which way the disc may be turned, the rays are always in the proper direction.

Metal tubes of different lengths and dimensions are arranged so that they can be fastened to the disc as shown. Where the diseased condition is of irregular outline, we wrap thin sheet lead around the end of the metal tube "C", and fasten it by means of a clamp. This makes the tube flexible so that it can be then easily moulded into any desired shape. By means of the long metal tubes, it is possible to direct the rays on to any diseased surface, whether a cavity or exposed.

This method is a great advance over the ordinary way which consists of cutting a hole in a piece of tin foil, the size of the diseased area and tying it in position and placing the tube in as near the proper place as possible. This is a very uncomfortable method aside from the fact that the patient will necessarily move more or less and thus will not get the full effect of the rays.

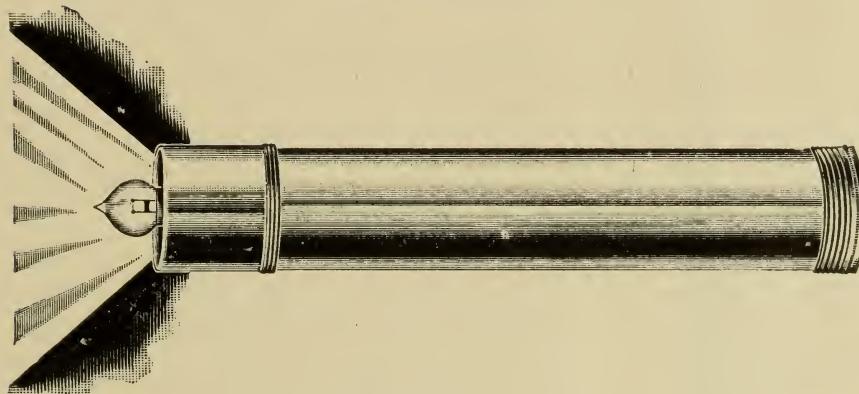
This apparatus has a specially designed tube for this work, the particular feature of which is a funnel shaped anode.

Price, - - - \$40.00

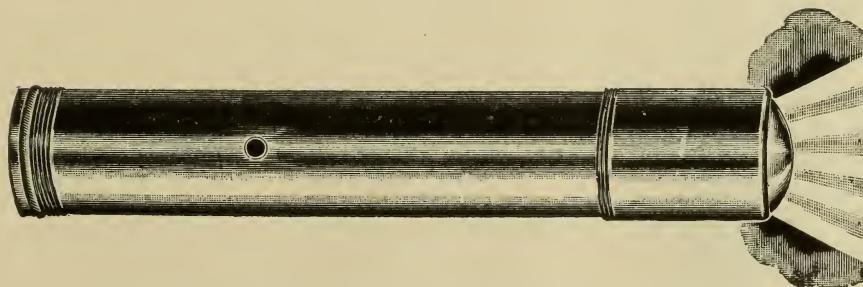
Price, with tube, 55.00 -

PORTRABLE ELECTRIC NOVELTIES.

SEARCHLIGHT.



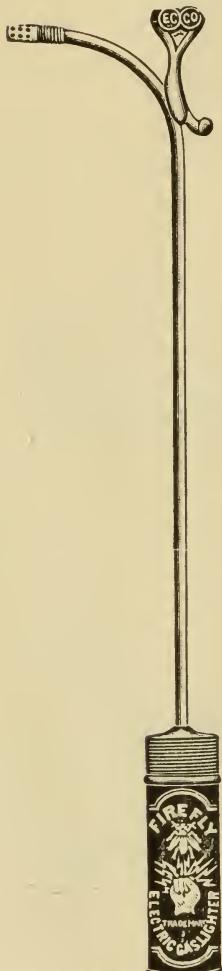
Cut 10.



Cut 10 A.

The handsome Searchlight shown in Cut No. 10 is one of the most popular and useful forms of dry battery illumination. It is invaluable in the home or office and is the only Searchlight on the market throwing a clear spot, no ring, of light. It can be easily adjusted to burn continuously if so needed as well as the usual flashlight service. The three cells of dry battery used in this device are among the best and can be easily withdrawn and new ones replaced at any time.

Price, large size,	- - - -	\$3.50
Price, small size,	- - - -	2.50
Price, 3 dry cells for replacement,	-	.35
Price. Lamp for same,	- - - -	.50



ELECTRIC GAS LIGHTER.

This useful little device shown in cut 11 is one which should be in every home and office. It avoids the risk of fires arising from the use of matches or tapers and is neat and convenient.

Price, with 24 inch stem,	-	\$1.25
" three dry cells for Renewal,		.35
" Platinum tip for same,		.25

DRY CELL BATTERIES.

We can supply several of the best makes of dry battery cells on the market and as we have conducted very severe and exhaustive tests thereon we can assure intending customers that they will give every satisfaction. All these batteries will average about $1\frac{1}{2}$ volts per cell.

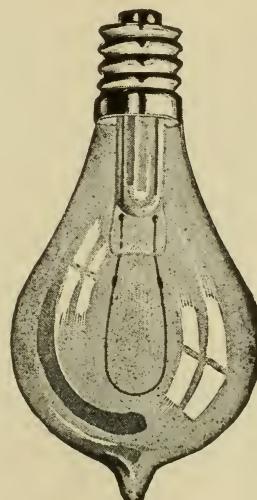
Price, No. 1 size,	.50
" No. 2 "	.60
" No. 3 "	.70

MINIATURE LAMPS.

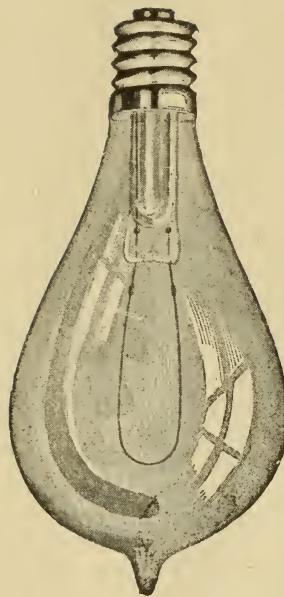
The use of Miniature Lamps for all kinds of decorative work and also in many fields of usefulness is at the present time so understood, that it is not necessary for us to discuss their desirability. Owing to the numerous and rapidly increasing special types of lamps which are every year coming into favor, it is impossible in a general catalogue of this nature to attempt to show or describe many of them. We have therefore endeavored to list those most in demand, but can assure our customers that prompt attention will always be given to inquiries for all kinds.

SERIES LAMPS.

The following lamps are used on electric lighting circuits of 100 to 120 volts or, of 50 to 60 volts. They are in great demand for all classes of interior decorative work and are also largely used for many kinds of outdoor illumination where higher candle power lamps are inappropriate. The 1 cp. lamp shown in Cut 12 should be connected, 8 in series on 100 to 120 volts or 4 in series on 50 to 60 volts. Each series will take about one third of an ampere of current. They can also be used satisfactorily on good storage batteries in multiple on about 14 volts.



Cut 12.



Cut 13.

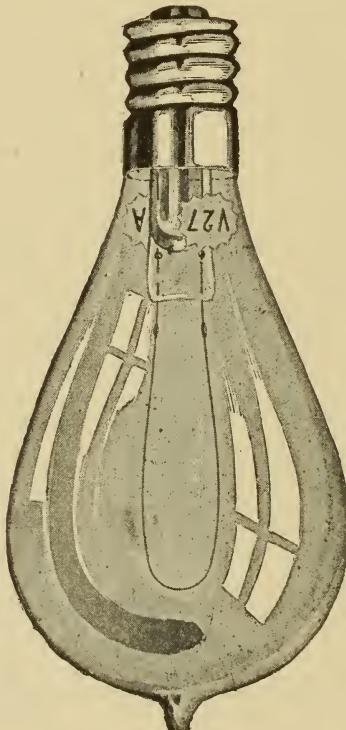
The 3 cp. Lamp shown in Cut 13 should be connected the same as the 1 cp. Each series however will take about one ampere of current.

The 5 cp. Lamp shown in Cut 14 should be connected 4 in series on 100 to 120 volts or 2 in series on 50 to 60 volts. Each series will take about half an ampere of current.

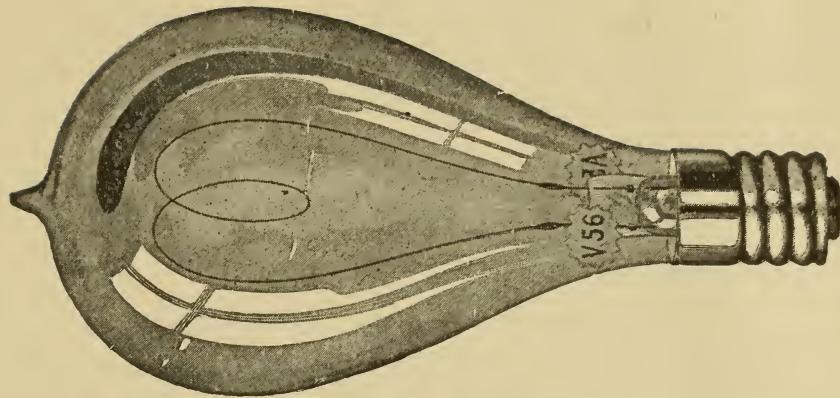
The 8 cp. Lamp shown in Cut 15 should be connected two in series on 100 to 120 volts or burned in multiple on 50 to 60 volts. Each series will take about half an ampere of current.

The one and three candle power lamps are fitted with the miniature Base unless otherwise ordered and the five and eight candle-power Lamps are always fitted with the Candelabra Base.
(See Sockets and Receptacles.)

All these Lamps can be supplied in colors if desired and we shall be pleased to quote special prices on large quantities.



Cut 14.



Cut 15

Prices,
less than 200. 200 and over.

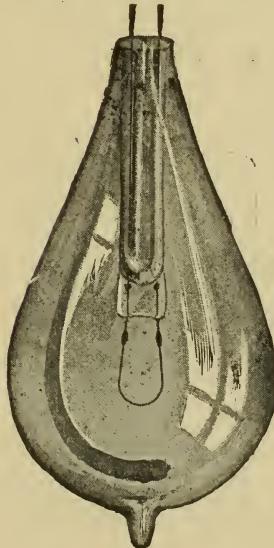
B. V. 1 cp. Series, Plain,	.60	.50
B. V. 3 cp. " "	.60	.50
B. V. 5 cp. " "	.60	.50
B. V. 8 cp. " "	.60	.50

Frosted 10 per cent. extra. Artificially colored 20 per cent extra.

Natural colored green, blue or purple 10 cents extra.
Natural colored ruby 15 cents extra.

BATTERY LAMPS.

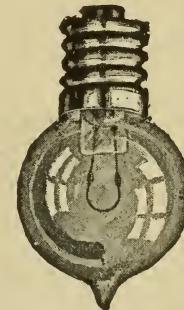
We can supply Battery Lamps for use on any kind of Batteries either Primary or Storage and of any voltage



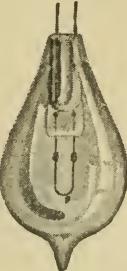
Cut 16



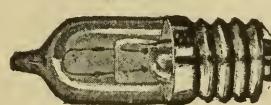
Cut 17



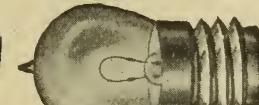
Cut 18



Cut 19



Cut 20



Cut 21

or candlepower. The Lamps shown in cuts 16 to 21 are largely in demand for all classes of dry-cell work. They are made from $2\frac{1}{2}$ volts up, according to the number of cells in operation.

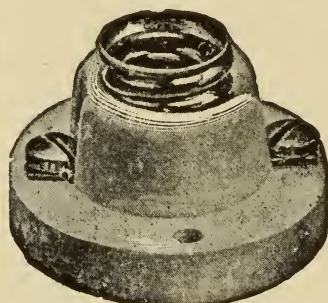
		Price
	Less than 200	200 and over.
Wire, - - - - -	.50	.45
Miniature Base, - - - - -	.55	.50

SOCKETS AND RECEPTACLES.

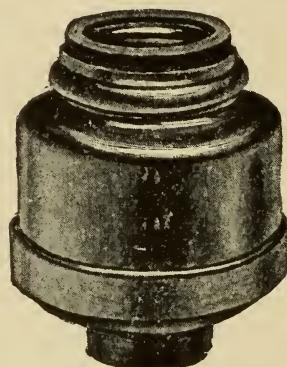
Of these Cuts, numbers 1, 2 and 3 are for candelabra Based Lamps B. V. 8 cp. and 5 cp. Numbers 4, 5 and 6, are for Miniature Based Lamps B. V. 3 cp. and 1 cp. and also for Based Battery Lamps.



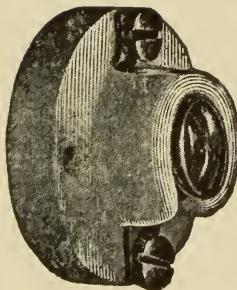
No. 1



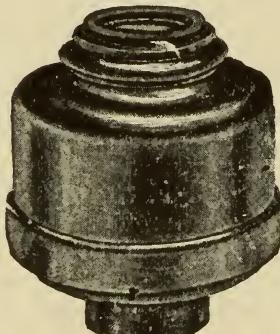
No. 2



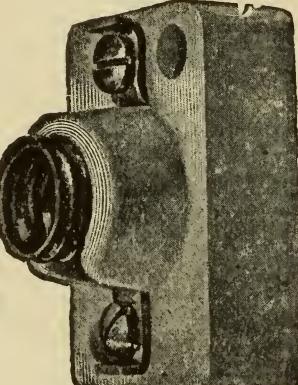
No. 3



No. 4



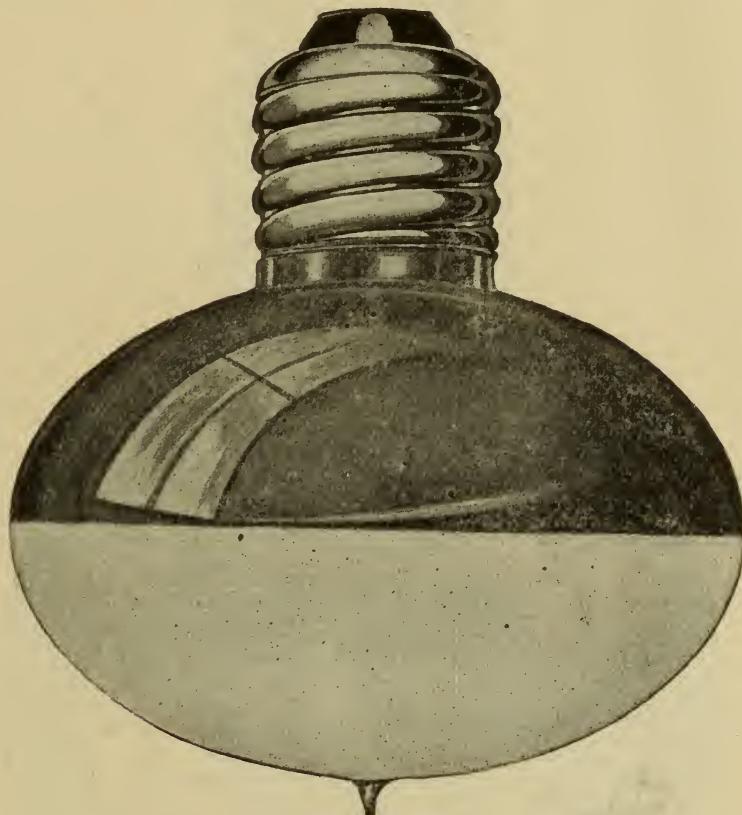
No. 5



No. 6

Prices, No.	1	-	-	16 cents.
" "	2	-	-	10 "
" "	3	-	-	32 "
" "	4	-	-	8 "
" "	5	-	-	32 "
" "	6	-	-	30 "

REFLECTOR LAMP.

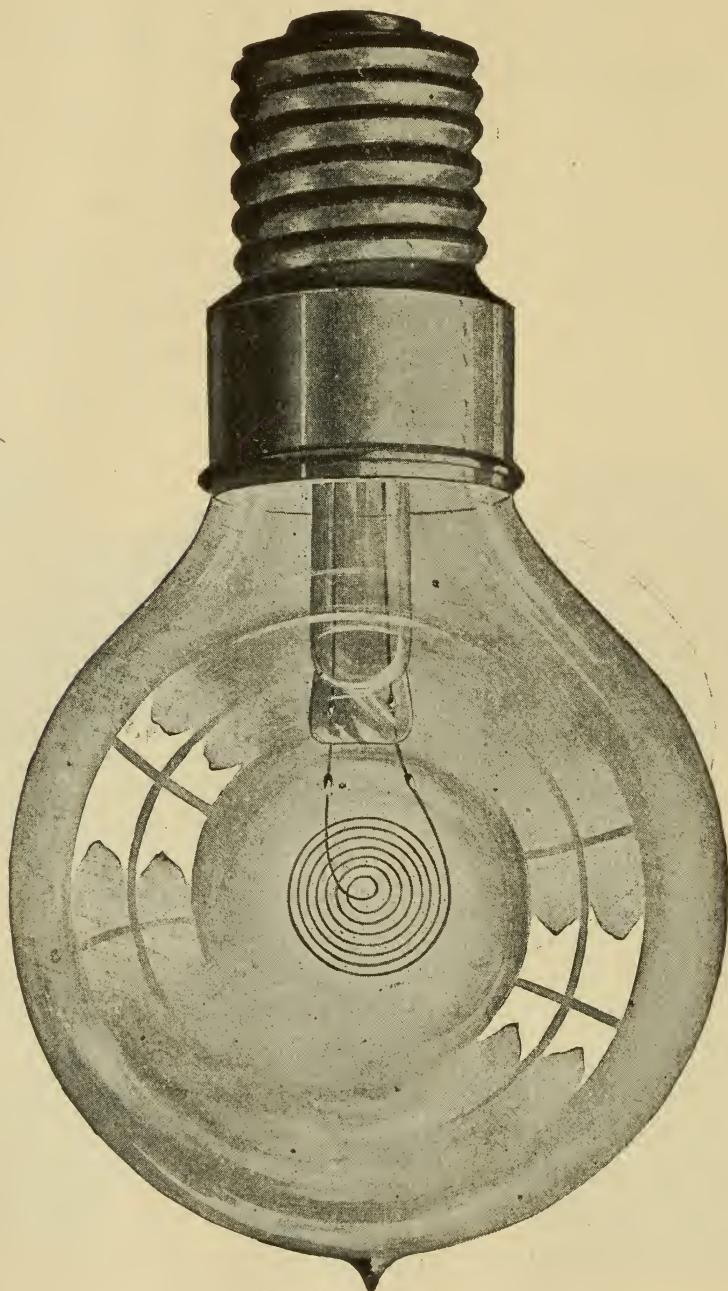


Cut 22.

This Lamp shown in Cut 22 is a very handsome and useful one for ornamentation or Desk use. It is silvered on the back and can be frosted in front thus obtaining a soft reflected light. The silvering is backed up in any color desired to match with trimmings of room.

Price, - - - \$1.00.

STEREOPTICON LAMPS.



Cut 23.

This Lamp shown in Cut 23 is especially adapted where a very brilliant and concentrated light is needed. It can be supplied with silvering on back leaving a focussing area in front of the filament if desired.

Price, - - - \$1.00.

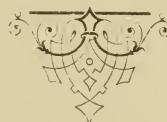
With silvering, - - 1.25

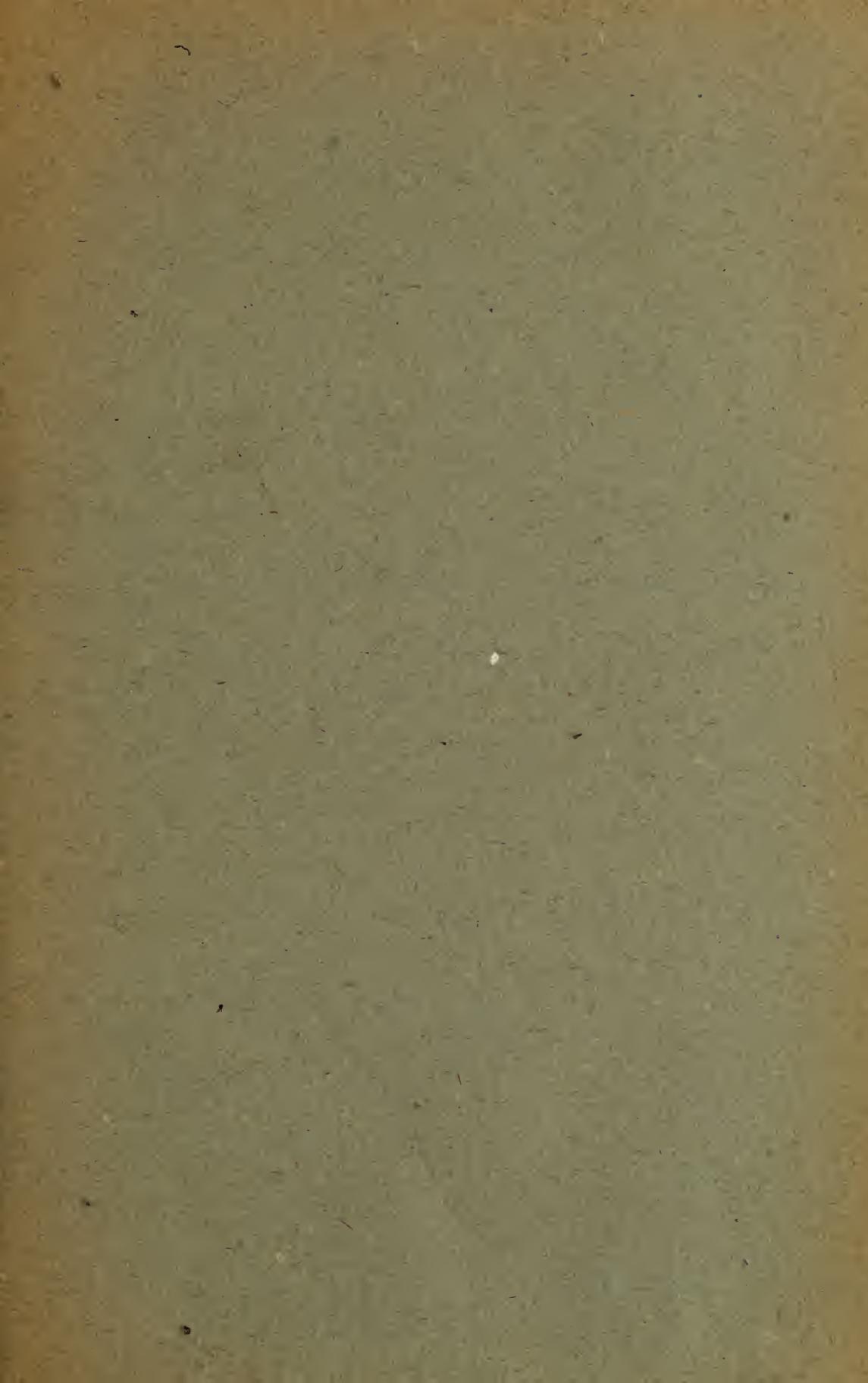
Both the Reflector and Stereopticon Lamps can be supplied with all standard Bases and for all voltages from 100 to 120.

The following are a few of the prominent X-Ray
Operators using the Bario Vacuum Regulator

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DR HARVEY KING,	" " "
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ST. FRANCIS XAVIER COLLEGE,	" " "
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DR. H. E. WAITE,	" " "
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EASTON HOSPITAL,	Easton, "
DRS. EVANS & WILLIAMS,	Newcastle, "
OIL CITY HOSPITAL,	Oil City, "
CHARLES O. FILES,	Portland, Ore.
GERMAN HOSPITAL,	Philadelphia, Pa.
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HOMEOPATHIC MED. HOSP.	" "
DR. W. O. HORNER,	Cleveland, Tenn.
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